

Interactive comment on “Rainfall and temperature estimation for a data sparse region” by R. L. Wilby and D. Yu

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Referee #2 welcomes the practicality of our approach and recognises the need for reliable meteorological data for climate risk assessment and adaptation planning. No major comments are raised, but we were asked to respond to a few minor comments.

As suggested, and for completeness, we will refer to other public domain data sets such as those developed by the Climatic Research Unit (CRU).

We recognise that validation against a single year (2007) is less than ideal but, as we note before, use of a different network was a stringent test. The relative aridity of 2007 when compared with 1998–2006 makes the test even more demanding and revealing. There are simply no other data available to work with at this time.

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The weather generator demonstrated by us was applied to point data, but there is no reason why it might not be calibrated using gridded data. In fact, given the availability of some globally gridded products, this might enhance transferability. Calibrating with gridded data also raises the prospect of generating catchment scale rainfall (noting that in semi-arid environments, area-average rainfall is less useful than distributed rainfall for hydrological simulation). We will raise these points in section 5.

We have examined TRMM and NDVI on a sub-annual basis but did not report the findings because of space constraints. Moreover, the regression models presented in Table 3 were constructed by pooling all data in order to maximise the information for parameter estimation. Sub-annual parameterisation is an appealing idea but is ultimately hampered by the very small number of rain days in the training set. This is particularly challenging when estimating wet-day amount distributions. Again, we will mention these points.

Ideally, space- and data-permitting we would have tested the model at other sites. As mentioned, Taiz was chosen because of the importance of the region for agricultural production and to extend earlier research.

We will address the remaining minor corrections and comments as directed by Referee #2.

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